2018
28-30 JUNE
VIENNA, AUSTRIA
SUPPORTIVE CARE MAKES EXCELLENT CANCER CARE POSSIBLE

Is usage of colistimethate sodium in pediatric oncology practice rational or rampant? -

A self audit of tertiary care centre

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ANNUAL MEETING ON SUPPORTIVE CARE IN CANCER

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Disclosure

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- Nothing to disclose

Introduction

- Multidrug resistant (MDR) gram negative bacterial (GNB)
  - Common in pediatric oncology practice
- Rate of resistance in our unit
  - β-lactam/β-lactamase inhibitor (BL/BLI) -66%
  - Carbapenem (CB) -50%
- Only life line left behind is colistimethate sodium (CS)
  - Irrational usage of CS -predispose the development of resistance.
- Self auditing of CS administration
  - Provides measure of its rationality in usage

Aims and objectives

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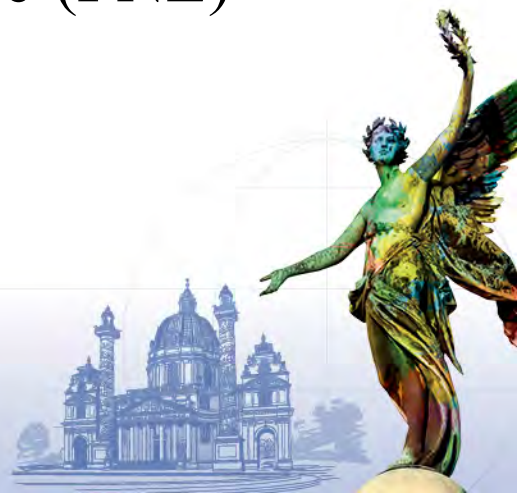
- To audit - CS administration in our unit
  - The frequency
  - The indication
- To evaluate -
  - The outcome of febrile neutropenia episode (FNE) following CS administration.



Methodology

- FNE -between January 2016 and July 2017
  - Retrospective analysis.
- 924 FNE was observed during study period
- FNE treated with CS (n=116/924) was 12.3%
- Surveillance stool culture was performed
  - At diagnosis of malignancy in leukemic children.
- De-escalation approach
  - Past history of MDR GNBI
  - Surveillance stool culture had MDR GNBI

Methodology

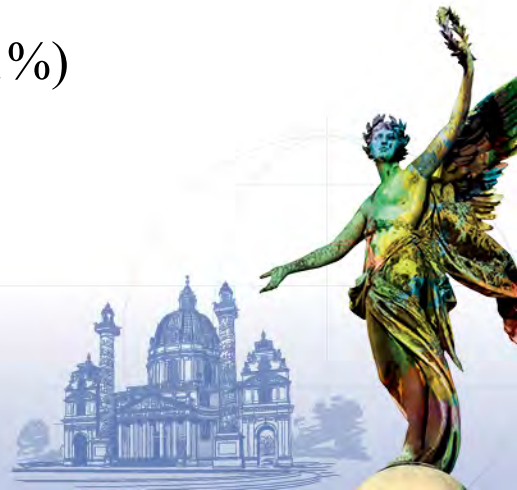
- CS was never administered in isolation
  - Administered either with carbapenems or tigecycline .
- CS given as infusion over 1 hour during all FNE
- Definitions
  - MDR: Non-susceptibility (intermediate or resistant) to at least 1 agent in 3 different class of antibiotics
  - Underweight; Weight for age < -2 Z score for age and sex in WHO growth chart
  - Stunting: Height for age < -2 Z score for age and sex in WHO growth chart

Results

- De-escalation approach-14 (12.1%) episodes
- At initiation of CS (IQR)
  - Duration of neutropenia-6 (5-10) days
  - Duration of FNE- 4 (3-5)days
  - ANC - 200 (100-400)/mm^3
- Co-morbidity
  - Underweight in 41 (35.3%)
  - Stunting in 28 (24.1%)

Results- Indication for CS initiation

- Clinical sepsis - 46 (40.3%) episodes
- Microbiologically documented infection (MDI) -39(33.6%) episodes
  - 33/39 (84.6%) episodes were by MDR GNB isolates
    - 18/33- E.coli
    - 12/33- K. Pneumonia
    - 3/33- P.aeruginosa
- Previous MDI/ surveillance + ve by MDR isolates - 14 (12.1%) episodes
- Clinically documented infection (CDI) - 8 (6.8%) episodes
- Severe sepsis - 9 (7.4%) episodes



Results- primary malignancy

- Acute myeloid leukemia - 62
- Acute lymphoblastic leukemia - 42
- Non- Hodgkins Lymphoma - 9
- Other malignancies - 3.

Results- outcome

- Duration of CS administration was 14 (8-16) days
- Defervescence was attained in 102 (87.9%) FNE
  - Interval of 10.9 ±5.7 days
- 14 (12.1%) FNE culminated in mortality
  - Severe septicemia due to GNB isolates in 11
  - Clinical infection of respiratory tract in 3
- All the children who succumbed were managed with escalation approach
- Mortality was associated with stunting (P=0.03)

Conclusion

- CS was administered in 12% of FNE
- 2/5 times CS was initiated for clinical sepsis.
  - These FNE could have been due to malignancy or occult infection.
  - Robust biomarkers or clinical risk stratified approach to identify underlying malignancy or occult sepsis
- Children with stunting are expected to have poor outcome despite usage of CS and other broad spectrum antibiotics.
- Surveillance stool cultures to identify MDRI may guide us in utilizing antibiotic de-escalation approach.